LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1. (Previously Presented) A liquid crystal display element, comprising:

a front side substrate having a front side electrode,

a rear side substrate having a rear side electrode, and

a liquid crystal layer interposed therebetween,

wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising

a nematic liquid crystal, and

an amount of chiral dopant sufficient to provide reflection of visible light, and

wherein the liquid crystal layer exhibits a plurality of display states;

wherein a display state is changed by a voltage applied across the electrodes, and at least one state among the display states is maintained stably,

wherein at least a part of the front side electrode and the front side substrate is transparent;

wherein the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface so as to form pixel portions and interline portions,

wherein the liquid crystal in said interline portions remains in a focal conic state, and

wherein the maximum space a (μm) between adjacent electrode regions and the thickness d (μm) of the liquid crystal layer satisfy a relational formula of $1.0 \cdot d<a<4.0 \cdot d$.

Claim 2. (Previously Presented) A liquid crystal display element, comprising:

a front side substrate having a front side electrode,

a rear side substrate having a rear side electrode, and

a liquid crystal layer interposed therebetween,

wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising

a nematic liquid crystal, and

an amount of chiral dopant sufficient to provide reflection of visible light, and

wherein the liquid crystal layer exhibits a plurality of display states;

wherein a display state is changed by a voltage applied across the electrodes, and

wherein at least one state among the display states is maintained stably,

wherein at least a part of the front side electrode and the front side substrate is transparent;

wherein the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface so as to form pixel portions and interline portions,

wherein the liquid crystal in said interline portions remains in a focal conic state;

wherein the maximum space a (μm) between adjacent electrode regions, the thickness d (μm) of the liquid crystal layer, and the maximum effective voltage V_{max}(V) of a voltage applied to the front side electrode and the rear side electrode satisfy a relational formula of $1.0 \cdot d<a<d \cdot V_{max}/10$.

Claim 3. (Original) The liquid crystal display element according to Claim 2, wherein V_{max} is 48 V or less and $2.5\mu m<d<6.0\mu m$.

Claim 4. (Withdrawn) The liquid crystal display element according to Claim 2, wherein at least a part of the front side electrode comprises a plurality of segment electrodes, and the rear side electrode is a single common electrode arranged so as to correspond to all the segment electrodes, or the rear side electrode is a plurality of common electrodes arranged so as to correspond to each plurality of segment electrodes.

Claim 5. (Original) The liquid crystal display element according to Claim 2, wherein at least a part of the front side electrode is stripe-like electrodes and at least a part of the rear electrode is stripe-like electrodes, said stripe-like electrodes of the front side electrode and the rear side electrode being arranged so as to be crossed in the substrate plane.

Claim 6. (Original) The liquid crystal display element according to Claim 5, wherein the disposition density L_d (number/mm) of the stripe-like electrodes is $2<L_d<15$.

Claim 7. (Withdrawn) The liquid crystal display element according to Claim 4, wherein the rear side electrode is a reflective electrode.

Claim 8. (Original) The liquid crystal display element according to Claim 5 wherein the rear side electrode is a reflective electrode.

Claim 9. (Withdrawn) The liquid crystal display element according to Claim 2 wherein a voltage pulse having a pulse width T (ms) of 10 ms<T<1000 is applied to the liquid crystal layer.

Claim 10. (Previously Presented) A liquid crystal display apparatus, comprising:

the liquid crystal display element described in Claim 2,

wherein, when a segment display and/or a dot matrix display is carried out, figures and characters are displayed.

Claim 11. (Withdrawn) The liquid crystal display apparatus according to Claim 10, which is used for a public display apparatus.

Claim 12. (Withdrawn) The liquid crystal display apparatus according to Claim 11, wherein a price of an article and/or time is displayed.

Claim 13. (Withdrawn) The liquid crystal display apparatus according to Claim 10, which is used for a display apparatus for a vehicle.

Claim 14. (Withdrawn) The liquid crystal display apparatus according to Claim 13, wherein a speed of a vehicle and/or time is displayed.

Claim 15. (Withdrawn) In a liquid crystal display element comprising a front side substrate having a front side electrode, a rear side substrate having a rear side electrode and a liquid crystal layer interposed therebetween wherein the liquid crystal layer exhibits a plurality of display states; a display state is changed by a voltage applied across the electrodes, and at least one state among the display states is maintained stably, the liquid crystal display element being characterized in that at least a part of the front side electrode and the front side substrate is transparent; the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface; an antiferroelectric liquid crystal is used for the liquid crystal layer, and the maximum space a (μm) between adjacent electrode regions, the thickness d (μm) of the liquid crystal layer, and the maximum voltage V_{OP} (V) of a voltage applied to the front side electrode and the rear side electrode satisfy a relational formula of $1.0 \cdot d < a < d \cdot V_{OP}/40$.

Claim 16. (Withdrawn) The liquid crystal display element according to Claim 15, wherein V_{OP} is 120 V or less and $0.5\mu m<d<6.0\mu m$.

Claim 17. (Withdrawn) The liquid crystal display element according to Claim 15, wherein at least a part of the front side electrode comprises a plurality of segment electrodes, and the rear side electrode is a common electrode arranged so as to correspond to all the segment electrodes, or the rear side electrode is a common electrode arranged so as to correspond to each plurality of segment electrodes.

Claim 18. (Withdrawn) The liquid crystal display element according to Claim 15, wherein at least a part of the front side electrode is stripe-like electrodes and at least a part of the rear electrode is stripe-like electrodes, said stripe-like electrodes of the front side electrode and the rear side electrode being arranged so as to be crossed in the substrate plane to effect a dot matrix display.

Claim 19. (Withdrawn) The liquid crystal display element according to Claim 17, wherein the rear side electrode is a reflective electrode.

Claim 20. (Withdrawn) The liquid crystal display element according to Claim 18, wherein the rear side electrode is a reflective electrode.

Claim 21. (Withdrawn) A liquid crystal display apparatus wherein the liquid crystal display element described in Claim 15 is used for a display apparatus of a vehicle.

Claim 22. (Previously Presented) A liquid crystal display element, comprising:

a front side substrate having a front side electrode,

a rear side substrate having a rear side electrode, and

a liquid crystal layer interposed therebetween,

wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising

a nematic liquid crystal, and

an amount of chiral dopant sufficient to provide reflection of visible light, and

wherein the liquid crystal layer exhibits a plurality of display states;

wherein a display state is changed by a voltage applied across the electrodes, and at least one state among the display states is maintained stably,

wherein at least a part of the front side electrode and the front side substrate is transparent;

wherein the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface so as to form pixel portions and interline portions,

wherein the maximum space a (μm) between adjacent electrode regions and the thickness d (μm) of the liquid crystal layer satisfy a relational formula of $1.0 \cdot d<a<4.0 \cdot d$, so that the alignment of the liquid crystal in said interline portions is restored from a planar state to a focal conic state.

Claim 23. (Previously Presented) A liquid crystal display element, comprising:

a front side substrate having a front side electrode,

a rear side substrate having a rear side electrode, and

a liquid crystal layer interposed therebetween,

wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising

a nematic liquid crystal, and

an amount of chiral dopant sufficient to provide reflection of visible light, and

wherein the liquid crystal layer exhibits a plurality of display states;

wherein a display state is changed by a voltage applied across the electrodes, and

wherein at least one state among the display states is maintained stably,

wherein at least a part of the front side electrode and the front side substrate is transparent;

wherein the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface so as to form pixel portions and interline portions,

wherein the maximum space a (μm) between adjacent electrode regions, the thickness d (μm) of the liquid crystal layer, and the maximum effective voltage V_{max}(V) of a voltage applied to the front side electrode and the rear side electrode satisfy a relational formula of $1.0 \cdot d<a<d \cdot V_{max}/10$, so that the alignment of the liquid crystal in said interline portions is restored from a planar state to a focal conic state.